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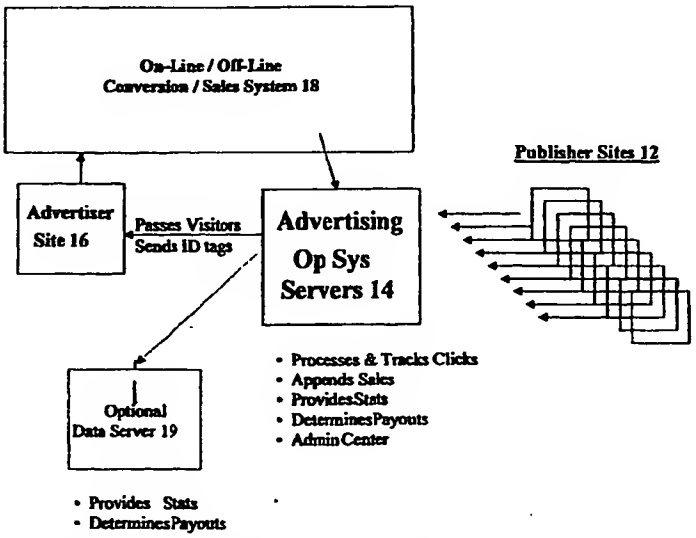
(54) Title: APPARATUS AND METHOD FOR PROVIDING ADVERTISING ON INTERNET-ENABLED CHANNELS



(57) Abstract: A method and system for providing advertising content to Internet-enabled channels. It includes an ad server connected to the Internet, a media server with creative for the channels connected to the Internet, an advertiser database connected to said ad server, a publisher database connected to said ad server, and a database connected to said media server for storing creative for a plurality of Internet-enabled channels. After an Internet user requests publisher content, content is sent from a server of the publisher to a user device and includes code to request an ad be served. This code operates the user device to request an ad location from the ad server, the ad server supplies an ad location to the user device, the code operates the user device to request an ad from the media server, and the media server supplies the ad for display on the user device.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

TITLE: Apparatus and Method for Providing Advertising on Internet-enabled Channels

FIELD OF THE INVENTION

The present invention is drawn to an Advertising Operating System that provides users with the opportunity to execute high-speed, optimized ad serving across multiple Internet-enabled channels for multiple clients.

BACKGROUND INFORMATION

In recent years, the exponential growth of the network of computer networks known as the Internet has also lead to enormous growth in the area of "on-line" advertising.

Typically, online advertising has been accomplished by banner advertisements in the form of graphics, such as Graphics Interchange Format (GIF) images, that serve as anchors for URL links to advertiser sites. The publisher of the Internet Web site typically specifies the ads to be shown on their site.

Many prior art systems required a publisher to contract with advertisers and to store ads on their own servers. In order to increase efficiency, better target the advertising and manage ad campaigns, various schemes relating to ad serving have been developed.

U.S. Patent No. 5,948,061 to Merriman, and assigned to DoubleClick, Inc., discloses a system in which statistics are compiled on individual users and networks and the use of the advertisements is tracked to permit targeting of the advertisements of individual users. In response to requests from affiliated sites, an advertising server transmits to people accessing the page of a site an appropriate one of the advertisement based upon profiling of users and networks.

Other systems, such as U.S. Patents Nos. 6,128,663 to Thomas and 6,141,010 to Hoyle, also collect demographic information on users and the information is then used to send targeted advertisements to them. However, many of these systems lack the tools needed for ad campaign management, are not particularly suited to serving many different types of creative, and are not suited to serving advertisements to multiple Internet-enabled channels.

BRIEF SUMMARY OF THE INVENTION

It is an object of the invention to create, install and maintain an Advertising Operating System for publishers, networks, agencies and advertisers.

It is a further object of the invention to provide automated publisher sign-up for an advertising network, with a centrally managed "Approval / Denial" capability for the publishers and advertisers who sign up.

It is another object of the invention to provide for differential payouts to each of the different publishers.

It is another object of the invention to provide an Advertising Operating System that provides ad serving capabilities so that publishers can dynamically change ads on Internet-enabled channels, whether by specific rules, by random, by fractional representation, by mathematical optimization, or by other means.

It is yet another object of the invention to provide a hyperlink / redirection from a publisher's Internet-enabled channel to services being promoted if a potential customer clicks on an Advertising Operating System provided banner or other form of creative.

It is yet another object of the invention to provide an Advertising Operating System that tracks clicks made from a publisher's Internet-enabled channel and tracks the result of those clicks into either a sale of or an inquiry into or any other action or set of actions in relation to the advertising network's advertisers.

It is yet another object of the invention to provide an Advertising Operating System that reports the clicks, sales, branding effect and any other advertising related measurement of the advertising network's products to both publishers and advertisers/agencies.

It is yet another object of the invention to provide an Advertising Operating System that allows multi-level reporting so that different parts of an organization can have different views of the data, depending upon "security clearance" granted by the owner of the data, whether a publisher, advertiser, networks thereof or other users.

It is yet another object of the invention to provide an Advertising Operating System that provides detailed level statistics on program performance at the publisher level, whether for publishers, advertisers, networks thereof or other users.

It is yet another object of the invention to provide an Advertising Operating System that provides an interface with relevant accounting systems so that checks can be issued in an automated fashion to publishers.

The Advertising Operating System of the present invention provides fast and cost-effective ad and content serving for online media for advertisers, agencies, networks and publishers.

What differentiates Advertising Operating System ad serving technology from other services is that it is capable of delivering tens of billions of marketing messages per month via Internet-enabled channels, such as the web, wireless, and e-mail, and it offers detailed reporting, delivery, management, and customer service tools to effectively serve and manage online marketing campaigns. Using the present invention, advertisers, publishers, and networks (users) can view the performance of each advertisement, creative, campaign, or creative content placement location and produce customized ad tracking reports.

The present invention also includes such features as:

- Geographic targeting so advertisers can target their ad campaigns to visitors from geographic regions, such as US and non-US, MSA, state, country, county, area code;
- Key word targeting capability to provide the ability to deliver targeted creatives or media based on key words used by the visitor or obtained from sections or areas visited reflecting interest in a keyword;
- Multi-level security (Publisher Access) that enables clients to view and configure their network, with all relevant information for their network, such as Internet sites, sign-ups, approvals, campaign and media entry, campaign management, reports, and default configuration options, being available from the user interfaces for the third-party network, and with security provided through logins and associated ownership rights, thereby enabling clients to select exactly which information each party is able to view and how they view it;
- Real-time interfacing with ad-decisioning logic across multiple servers to leverage a broad range of behavioral patterns and capabilities;
- Secure media serving using HTTPS and SSL to secure pages to provide the ability to support secure serving of media and tracking of clicks and actions to sites with secure content without the warning interstitials for non-secure media and provide security via

support for HTTPS- and SSL-based delivery of campaign creatives with proprietary security systems and protocols e.g. America Online, private networks;

- Fully multi-threaded ad servers that increase the scalability and performance of the ad servers distributed across fully redundant, scalable and failsafe systems; and
- Real-Time over-delivery prevention for advertisers and publishers to provide the ability to end campaigns more accurately for organic and third-party networks by monitoring the delivery of campaigns as they approach end-of-run across multiple servers.

The present invention also provides the advantages of:

- Reporting - the customized reporting capability provides a spectrum of detailed reports, all completely customizable and exportable to programs such as Excel as well as in other open and proprietary formats. This function gives the user the ability to create targeted reports on the fly, including highly informative graphs;
- Being multi-compliant - the present invention is compliant with all standard industry Internet systems and proprietary private networks and devices;
- Delivering all forms of Internet media - Successful ad and content delivery requires maximum flexibility - creatives can be in any form or dimension, including most forms of rich media, JavaScript, HTML, text, wireless protocols, video, audio as well as a standard .gif file;
- Reliability - As a stand-alone system, the technology is totally independent of outside software vendors using industry standard components, languages and protocols and can be enhanced and customized based on customer's feedback and needs.
- Delivering on a variety of User objectives to include branding, CTR, conversions, maximum revenue, maximum profit
- The Advertising Operating System can perform the desired functions with or without the use of cookies being placed upon the Recipient's computer
- User definable delivery options can provide variations of delivery to achieve frequency capping, occasion capping, sequential messaging, and triggers all of which can be within a channel or platform or across multiple channels and platforms.

- Delivery and collection of response data to intermittently connected internet devices such as Personal Digital Assistants (PDAs), Interactive Television devices (i.e., set-top boxes) and mobile telephones.

Reports provided by the present invention are comprehensive, flexible, easy-to-use and make it simple to analyze performance down to an hourly level. Any category can be reported on quickly and easily, allowing users to compare, without limitation, items such as campaigns, creatives, Internet sites, days of the week. Impressions, clicks, CTR, conversions or any other measurable action can be viewed instantly, for example, by categories including, but not limited to: advertiser; campaign; creative; Internet publisher; Internet site; conversion; geography; and time of day.

The time period for all reports is completely defined by the user. Reports can be sorted by categories including, but not limited to: run of campaign; year to date; month to date; this week; today; and hour.

Down to a daily level, for example, users can review campaign information on an hourly basis. All online reports can be sorted by any criterion simply by clicking on the title. Graphs can be generated for up to two criteria on any report. All reports can be downloaded to a common file format for easy importing into Excel or other analytic tools.

As used herein, the terms "creative" and "creative content" refers to the concept, design or artwork of an ad or element of content, including the technology used to create or develop the ad or element of content. The most common creative technology for banners is GIF, JPEG images or animated GIFs. Other creative technologies include Java, HTML or streaming media and the particular form/technology of the creative content is not meant as a limitation. The term "Internet-enabled channel" includes, but is not limited to, the World Wide Web, e-mail, instant messaging (IM), short messaging services (SMS), wireless (phone, PDA, pager, etc.), and digital television forms of Internet-based communication. The term "ad" refers to any message or content with an advertising objective. "Advertising Operating System" refers to the system or service used to schedule, choose, and deliver creative content to recipients on behalf of an advertiser, network or agency. "Ad server" refers to any computer or server used for the purpose of managing, scheduling and/or choosing the creative content. "Advertiser" refers to any entity that desires to advertise its own products or

services. "Agency" or "agencies" refers to any entity that represents one or more advertisers for purposes of placement of creative content on behalf of said advertiser(s). "Media server" refers to any computer or server used for the purpose of storage and retrieval of creative content. "Publisher" refers to any person, or representative of a person, who owns a Internet site, a network of Internet sites, email lists, or any other type of inventory in which creative content can be displayed, over any type of medium, such as a webmaster. "Destination sites" refers to any destination, such as Internet sites, wireless devices, and others, to which creative content shall be delivered. As used herein, "URL" refers to any unique destination finder, including, but not limited to uniform resource locators. "Recipient" refers to any individual who receives and/or views creative content. "Users" refers to any advertiser, agency, network or publisher who uses the Advertising Operating System, or a service thereof, of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 illustrates a schematic diagram of a typical embodiment of the present invention.

Figure 2 illustrates high-level banner serving in accordance with the present invention.

Figure 3 illustrates some details for ad campaign administration in accordance with the present invention.

Figure 4 illustrates a basic technical overview of the present invention.

Figure 5A illustrates a database structure in accordance with the present invention.

Figures 5B-C illustrate more detail of the internal and external data used in **Figure 5A**.

DETAILED DESCRIPTION OF THE INVENTION

The present invention comprises a method and system for providing advertising to Internet-enabled channels. It includes an ad server connected to the Internet, a media server connected to the Internet, an advertiser database connected to said ad server, a publisher database connected to said ad server, an Internet user database connected to said ad server and a database connected to said media server for storing creative for a plurality of Internet-

enabled channels. When an Internet user operates a user device to request publisher content, content is sent from a server of the publisher to the user device and includes code to request an ad be served. This code operates the user device to request an ad location from the ad server, the ad server supplies an ad location to the user device, the code operates the user device to request an ad from the media server, and the media server supplies the ad for display on the user device.

Upon a user selection of the ad, the code operates the user device to request an advertiser URL from the ad server and the ad server provides an advertiser URL to the user device. The user device uses the advertiser URL to request an advertiser target page from an advertiser server on the Internet and the advertiser server delivers a target page for display on the user device.

The user device includes, but is not limited to, any type of personal computer, Internet device, set-top box, PDA, Internet-enabled phone, or ATM terminal. The creative content can include, but is not limited to, any type of GIF banners, animated GIF banners, JPEG banners, JavaScript, HTML, text, rich media, and streaming media. The Internet-enabled channels can include, but are not limited to, any of web pages, e-mail, text messaging, and any other similar electronic/digital content and messaging platforms and specifically includes wireless channels.

The invention preferably includes an automatic sign-up page for advertisers and publishers, with the automatic sign-up page including a central approval and denial capability. It further allows publishers to dynamically change ads on Internet sites, whether by specific rules, by random, by fractional representation, by mathematical optimization or any other suitable means. The invention also has data sharing and collecting for optimization and accounting purposes.

The business model for the entity facilitating practice the present invention involves creating, installing and maintaining the Advertising Operating System service.

The software has various functions. Initially, it provides automated publisher and advertiser sign-up, such as on a signup page. It also enables a centrally managed "Approval / Denial" capability for the publishers and advertisers who sign up for the program and it allows for differential payouts to each of the different publishers in the program. In addition,

it provides interfaces for sales, trafficking and other functions required for administration of the system.

The software also creates a database of publishers in the program with their required program information (e.g. name, billing address, site URLs, tax ID #, etc.); provides ad serving capabilities so that publishers can dynamically change the ads on channels, whether statically, rules-based or by mathematical optimization; provides a hyperlink / redirection from the publisher's channel to services being promoted if the potential customer clicks on provided banners and other forms of creative; tracks the clicks made from a publisher's channel and the result of those clicks into either a sale of, an inquiry, or other action into program advertisers; and reports the clicks, sales, inquiries, or other actions into products within the program to the publishers and advertisers.

The Advertising Operating System software also allows multi-level reporting so that different parts of the organization can have different views of the data, depending upon "security clearance" granted by the publisher or advertiser. Within this reporting, it provides detailed level statistics on program performance at the publisher and advertiser level and provides an interface with the relevant accounting systems so that checks can be issued in an automated fashion to the publishers.

The installation step involves installing relevant computer code to provide the above functionality on dedicated servers located directly on the backbone of the Internet to ensure optimal performance.

Maintenance is ideally centrally provided for the program so that remote troubleshooting can occur, but the system can also be operated on a standalone basis. The central control of the required hardware and software allows simpler logistics for maintaining the system, with a resultant higher reliability. This also allows the entity practicing the invention to work with publishers and advertisers to provide on-going improvements and modifications and to provide technical assistance to the publishers and advertisers in the program.

Administration of the program involves: managing the approval / denial process of publishers, under the guidance of users; providing a creative farm and access to approved creative for the publishers; providing technical assistance to all publishers in the program; managing direct marketing campaigns (via e-mail, electronic newsletters, etc.) to the

publishers on behalf of advertisers; and managing all publisher payments on behalf of advertisers.

As illustrated in **figure 1A**, publishers from publisher sites **12** sign up with the system of the present invention. Banners (or other creative) are served by the Advertising Operating System to the publisher sites **12** and when the banners are clicked on, the publisher sites redirect visitors to an Advertising Operating System server **14** that processes and tracks the clicks. The Advertising Operating System server **14** then passes the visitor, along with their ID tags, to the advertiser Internet site **16**. Results/tracking information of the visit, such as from conversions or sales **18**, are collected by Advertising Operating System server **14** and used for such purposes as providing statistics, providing reports and determining payouts. This information can optionally be stored on a data server **19**.

A preferred embodiment of the present invention includes data sharing. In this system, advertisers (clients) are able to: receive many (i.e., typically up to seven) fields of data / information from the Advertising Operating System server; make a decision against each visitor, app, etc. and append that relevant decision to the fields of data ("0" or "1" being sufficient); and report that information back to the Advertising Operating System server for payment and stats purposes. Ideally, fields need to be ~25 characters long in type text or characters to allow the sending of both text and numbers in those fields.

Figure 1B illustrates the messaging involved in serving creative content such as an ad. When a user logs onto a user PC, the user is typically brought to an Internet page or a portal or search page as configured by the user. Thus this initial action is a request for some form of content by the user (transaction **1**). Content is then returned to the user from the Internet site that is the user's chosen entry point (transaction **2**).

However, in addition to content being returned, the Internet site that is enabled with the ad serving technology of the present invention requests an ad to be served to the user (transaction **3**) along with the content. This request goes to the ad server of the program, which controls the ad serving process and which keeps information on the user such as user demographics and other advertising administrative data, but not the ad itself. The location for that ad, on a media server that is not the Internet site of any advertiser, is returned to the users PC (transaction **4**) which then requests the ad to be served from the location on the media server (transaction **5**).

The media server contains thousands of banner type ads that can be served to users based upon user demographics and administrative information stored on the ad server. Thus when the ad is requested from the user's PC (transaction 5), the particular banner ad that is to be served is sent down to the user's PC (transaction 6) and displayed along with the content requested by the user. The ad server and media server do not need to be in the same location or even managed by the same company.

If the user does nothing with the ad that is served, no connection is made to the Internet site of the entity that is sponsoring the ad. If however the user is interested in the ad contents that are being displayed, the user can click on the ad. This "click through" results in a message being sent to the ad server (transaction 7) requesting a link to the site of the entity sponsoring the ad. Thus there is no link to the sponsor's site with the banner ad that is served to the user during transaction 6. This must be separately requested when the user clicks on the ad.

The link to the sponsor's location is then provided to the user (transaction 8) and the user's browser is then directed to request information from the sponsor's site via the appropriate URL (transaction 9). Once the request is received at the sponsor's site, the sponsor's Internet page is returned to the user's PC (transaction 10).

Figure 2 illustrates high-level WWW banner serving in accordance with the present invention. As illustrated in the figure, at step 21, an Internet surfer enters one of the Internet sites in the client network. An ad serving optimizer determines the best ad to serve the Internet surfer. Each Internet surfer has an ID (cookie) appended to their Internet browser that identifies them as unique. If the user has not been in the client network before, they are assigned a unique ID number, and served the "new user" ad for that particular site, time of day, etc. If the Internet surfer has an ID, the optimizer will lookup his/her information and set of product scores, at 22. The product with the best score will have its ad shown to that particular Internet surfer. In some circumstances (such as creative testing or data gathering), the best ad will not be shown to facilitate modeling efforts.

The ad is then shown to a Internet surfer, at 23. If the Internet surfer clicks on the ad or responds to it in some way, the user is re-directed to the advertiser's Internet site, at 24. For certain advertisers that provide tracking access, the advertising server technology tracks

the Internet surfer's movements through the advertiser's Internet site and reports certain transactions back to other parties.

Although described above with respect to a WWW click-thru banner, the invention can also be practiced in other ways. For example, in addition to click-thru and conversion ads, the invention can also be used for "view" ads, such as simple text message ads sent to wireless Internet-enabled devices, as well as other creative. Also, although described with respect to a WWW page, ads can also be delivered in e-mails, such as in an e-mail newsletter. In this case, as well as the wireless device case, the user request for content may be separated in time from the delivery and make take the form of an "opt-in" sign-up for a service that delivers the e-mail newsletter, text, or other type of digitally transmitted message.

Figure 4 illustrates the manner in which the ad server functions. The advertiser's agents enter the relevant advertiser campaign information in the "Admin Entry Screen" **44**. As each Internet surfer enters a client network site, at **40**, an ad server optimizer **42** accesses data **46** to determine which ad to display. The transactions created by the Internet surfer are then recorded at **48** for later analysis, model building, and report **49** generation.

The administrative entry screen, as illustrated in **figure 3**, contains the advertiser information **32** and product/service information **34**. Each advertiser and product receives a unique identification label that is tracked for every advertising campaign. Furthermore, different creatives for the same product are tracked independently. All of the data tracking can be seen in the Data section below.

There are three types of activities or ad serving scenarios that the ad system is responsible for handling:

- Ordinary, rules-based, or optimized ad serving.
- Quick Testing—where only a small sample size is needed to determine overall effectiveness of, for example, one banner over another, or to determine banner fadeout and frequency impacts.
- Data Gathering—the process of serving ads to a broad audience, constrained by the specifications placed by both publishers and advertisers, to develop an accurate model of performance.

The purpose of quick testing includes, but is not limited to, determining which ads work best from a CTR (click-through rate) point of view; determining the optimal frequency

for serving different ads, and determining the length of time before ads lose their appeal. The size of the tests will vary directly with their complexity. The system manages test scenarios **36** so that the appropriate sampling techniques are utilized.

The goal of a forced ad campaign is to deliver a time specified, action specified campaign for advertisers. At times, the present invention will NOT want to deliver the optimal ad to the available space so that it can run a particular campaign based on the client's specs for click, exposure, or sale distribution over time. (E.G. 10,000 clicks a week, uniformly distributed, for 4 weeks on "Women's Interest" sites only.)

By doing this, advertisers get to choose their constrains, such as the time of day and day of week they want their ads to show and both parties get to pick their payout preferences.

The Advertising Operating System server has the ability to collect, track and utilize data for the delivery of advertising. As advertisers become more data driven, the ad server allows advertisers access and use of its substantial data capabilities to enhance the value of their campaigns and increase knowledge of their potential customers. The data models are illustrated in **figures 5A-C.**

One way to organize a database structure is illustrated in **figure 5A.** Data is organized as survey data **51**, which includes, but is not limited to, recipient provided data, Internet surfer or recipient data **52**, external data **53**, advertiser data **54**, product data **55**, ad data **56**, publisher (i.e., webmaster) data **57**, site data **58**, payout data **59**, and transaction data **60**.

As illustrated in **figure 5B**, external data can be categorized as that available on the Internet **510** and that which is not necessarily derived from the Internet (non-Internet) **520**. Likewise, as illustrated in **figure 5C**, internal data can be categorized as that related to the Internet user (websurfer) **530**, the publisher (webmaster) **540**, and the advertiser **550**.

The following functionality / categories of data is collected for use in modeling.

1. **Unique ID branding at 52**: Each person who enters the network of sites/channels needs to have a unique ID branded onto them to determine who they are for frequency calculations and data tracking; every time a Internet surfer enters one of the Internet sites in the network or is messaged (e-mail, IM, wireless), the ad server looks up their ID number and uses that data to determine what ad to serve.
2. **Transaction Database at 60:** Time of day, day of week, exact date that banner/creative is served and other descriptive data and measured actions are taken

(e.g. clicks, download, request for info, etc.)

3. **Advertiser Categorization at 54**: All advertisers will be categorized so that Internet sites/channels/publishers can determine appropriateness for their Internet sites/channels.
4. **Internet site Categorization at 58**: All Internet sites/channels placed in a category of content for ad targeting (see Categories below)
5. **Internet site Tags**: On network Internet sites, capture meta-tags and other keywords to use as targets for identifying similar content. Preferably require all Internet sites/publisher channels to post a category tag or label for each section of content they want to place an ad next to.
6. **IP Address** of Internet surfer.
7. **IP Address Data Lookup**: Using publicly available datasets based on the ISP that owns / reserves the IP address, lookup geographic location (country, state / province), area code, Domain name, Domain type, name of ISP, SIC code for domain name if not an ISP (for bus. to bus. marketing), Occupation category for SIC, and any other suitable descriptive information available
8. **Internet surfer's browser**: Data from the Internet surfer's browser
9. **Survey at 51**: each survey participant needs to be branded with an ID that allows the ad server to look up their raw data (i.e., gender, occupation, age, country, zip code) to serve and analyze creative performance against.
10. **Connection to MC / Visa for Payment Processing**: Order Form connection to International payment systems.
11. **Link to advertisers**: The ability to track sales or movements / actions within an advertiser's Internet site/channel to a particular Internet surfer from the program and link sales info with the ads that generated the sale, etc. to track Internet surfer from "entry into network" to "purchase of product" (also could include data sharing of advertiser preferred attributes for modeling purposes).
12. **Business Information at 53**: A link to an external data source such as American Business Information (ABI) and/or Dun + Bradstreet (not real-time) to track size of business, other attributes for employers and businesses that have been identified.
13. **Network Internet site Registration Data**: Incorporate Internet site registration data

for more explicit targeting.

14. Micro-Credits Payment System: Provides network Internet sites and advertisers with ability to charge nominal amounts for certain transactions (like $0.10 - $1.00).

15. Internet surfer Demographics: Links to major data houses (i.e., Polk, InfoBase, Axciom, etc.) on a batch or real-time basis.

16. Credit Bureaus at 53, Batch: A link to the credit bureaus, done in batch, to track individually identifiable information and to process credit related orders.

A payout schedule 59 is displayed to the publishers. Tracking of historical payout schedules is done so that historical payments can be calculated at any time. The publishers see their payouts earned according to each advertiser in the publisher stats section. The advertiser stats section will have each advertiser's performance across categories, Internet sites/channels and other relevant data view or combinations.

Payouts can be, but are not limited to, one of the following:

- CPM—based on the number of ads served
- Payout / click (visitor)
- $ payout per action
- % payout per action
- Payout based upon recurring actions or a combination of actions

Each advertiser specifies a desired payout option and each publisher can specify whether to accept all, some, or only one of the payout options. This selection criteria could limit the total number of advertisers available for optimization on the publisher's site. Each advertiser has a payout associated with each product they sell. Publisher statistics and payouts are based on all participating advertisers' payout plans.

Raw and unique impressions and clicks are tracked. Unique clicks are defined as unique IP addresses within the past x hours where "x" can be any suitable period of time. Publishers are allowed to place all kinds of links they want for payout options, but they should be specified and tracked separately for ideal placement. For example, position of banners should be tracked—top of page, text link, bottom of page, button, etc.

The present invention has the ability to use multiple graphics types, including enhanced images / graphics, buttons, and pop-up windows / interstitials.

To prevent fraud, the system checks for sudden jumps in performance on both

publishers and advertisers stats and issues automated flags. For acceptance purposes, the system includes the ability to easily check, manually, the categorization and acceptability of Internet sites. The system therefore provides means to capture URLs of Internet pages and provide a quick link to them in a verification page for a client agent.

Reporting is provided by online access to comprehensive performance reports. Performance reports include information vital to monitoring the results of campaigns, including, but not limited to:

- Number of ad impressions delivered
- Number of clicks
- Click rate
- Relative performance by Internet site
- Campaign optimization analysis
- Sell-through by site (if structured for this variable)
- Overall site ranking by designated performance variables

All Internet sites and Internet pages are categorized into categories, as well as geography and language, including, but not limited to:

- Personal Finance
- Business Info / News
- Automotive
- Entertainment
- Games
- Health
- News & Society
- On-line Communities / Chat
- Portal Sites / Search Engines / ISPs
- Sports
- Computers - Software

- Computers – Internet
- Computers - Hardware
- Travel
- Virtual Stores
- On-line Help Centers / Advice for Internet surfers
- Publisher Support Sites
- IT/Technology Professional
- Business-to-Business E-Commerce
- Hobbies and Leisure

The categorizations noted above are not meant as limitations, and other sub-categories are possible within the discretion of the system operator. As time goes on, all Internet pages, Internet sites, and organizations identified through data collection will be categorized according to codes—i.e., the practitioner of the present invention can append Dun & Bradstreet, American Business Information SIC Codes or other recognized standard classification codes if it knows the names of organizations in the United States.

Additionally, all advertisers are categorized into categories, as well as geography (country and zip code / region) and language, including, but not limited to:

- Personal Finance
- Business Info / News
- Automotive
- Entertainment
- Hobbies and Leisure
- Health
- Electronic Equipment
- Clothes
- Toys
- Household Goods / Groceries
- Personal Hygiene Products
- Food / Restaurants / Carryout
- News & Society

- On-line Communities / Chat
- Portal Sites / Search Engines / ISPs
- Sports
- Computers - Software
- Computers – Internet
- Computers - Hardware
- Software
- Games
- Travel
- Generic Virtual Stores
- On-line Help Centers / Advice for Internet surfers
- IT/IS Professionals

Again, the categorizations noted above are not meant as limitations, and other sub-categories are possible within the discretion of the system operator. The system is flexible enough to handle future changes. And again, as time goes on, all Internet pages, Internet sites, and organizations identified through data collection can be categorized according to codes—i.e., the practitioner of the present invention can append Dun & Bradstreet, American Business Information SIC Codes or other recognized standard classification codes if it knows the names of organizations in the United States.

Ad serving in the present invention is provided by dedicated, high-speed connections (>= T-3), backed-up. The database is scaleable, queriable, fast, and reached off-line from the ad serving system.

Data storage in the present invention can involve separate servers for data storage and retrieval from the ad serving servers and is performed in databases for fast and easy querying.

Data for data modeling is accessed in batch or real-time mode from the database servers. The ad servers periodically dump transaction data to the database servers. The database servers then do data linking to external databases if the external connections are not needed in real-time. If external connections are needed in real-time, ad servers will have to make the connection

Data modeling is run, for example, on an hourly basis to update current scores for each product category by Internet surfer/site/location/destination/etc., but can also be run

more or less frequently. For replaced advertisers, current scores on past advertiser in same category will be used until significant amount of data is collected for an updated score to be made.

The invention also includes network site approval. When a site is selected and placed on buy order they immediately receive confirmation via the Internet and through email that their site has been selected with both rate, buy size and scheduling information. The site then executes a review option that does the following through an admin screen:

- Approve or Reject Order
- Rejection letters are form letters designated by reason codes
- Verify categorizations of sites and change them if necessary
- Send approval and / or rejection letters to their specified email address automatically

This invention can be used for advertisers receiving publisher requests for ad buys. The leasing of the system to either Advertising Operating System agencies or ad networks/Internet sites could only be for administration purposes. The actual traffic and creative delivery would occur through the Advertising Operating System of the present invention. Advertisers would sign up under the lessee's system. All that is needed is a change the logo and name on the reports and signup functions, tracking all sub-networks to the originating lessee. The entire system could also be provided on a stand-alone basis.

"Super Administration" functionality can be provided to manage the sub-networks and lessees as a whole. This would include the ability to view reports by lessee—network impressions, clicks, etc.; the ability to review profitability of lessee; and the ability to setup and discontinue a lessee arrangement.

Lessee Administration functionality is very similar to functionality needed by a client to maintain its own network and includes: the ability to enter advertisers and their campaigns; the ability to upload new creatives and to schedule their implementation; the ability to enter advertising constraints and conditions—i.e., targeting, time of day, Internet site category inclusion/exclusion; the ability to schedule ad runs—i.e., amount of traffic over what time frame; and the ability to approve and/or deny Internet sites into their sub-networks.

The ad serving system typically can include load balancers, such as Cisco/Arrowpoint CS 800's performing layer 7 polling with HTTP "get" calls every 1-3 seconds, to evenly

distribute the requests from Internet pages over the Internet to the ad servers. The ad servers will typically consist of 32-36 Pentium III processors running at 600-800 MHz, each having 1-2 GB of RAM and 36GB hard drives. Server software can be C++ compiled and running on FreeBSD, being held together with Chron, Perl, and Perlscripts, and could also be ported to Linux, A/UX, Windows NT, and Sun Solaris.

Typical cookie server hardware, used for serving browsers that cannot or will not accept cookies, can include multi-processor systems with raid arrays and 4GB of RAM, running on Linux or FreeBSD and communicating with the ad server via TCP.

The database hardware can typically include a pair of Sun 4500 processors and an EMC raid array with MySQL, Oracle or other suitable database management software. Cached media can be served based on decisioning logic and optimizer from the ad database via NFS mount to the ad server.

We Claim:

1. A method for providing advertising to Internet-enabled channels, comprising:

providing an ad server connected to the Internet;

providing a media server connected to the Internet;

storing advertiser data in a database connected to said ad server;

storing publisher data in a database connected to said ad server;

storing creative for a plurality of Internet-enabled channels in a database connected to said media server;

wherein a user operates a user device to request publisher content;

said content is sent from a server of said publisher to said user device, said content including code to request an ad be served;

said code operates said user device to request an ad location from said ad server;

said ad server supplies an ad location to said user device;

said code operates said user device to request an ad from said media server; and

said media server supplies said ad for display on said user device.

2. The method of claim 1, wherein upon a user selection on said ad, having said code operate said user device to request an advertiser URL from said ad server; and

said ad server provides an advertiser URL to said user device.

3. The method of claim 2, wherein said user device uses said advertiser URL to request an advertiser target page from an advertiser server on the Internet and said advertiser server delivers a target page for display on said user device.

4. The method of claim 1, wherein said user device includes any of personal computers, Internet devices, set-top boxes, PDAs, Internet-enabled phones, and ATM terminals.

5. The method of claim 1, wherein said creative includes any of GIF banners, animated GIF banners, JPEG banners, JavaScript, HTML, text, rich media, and streaming media.

6. The method of claim 1, wherein said Internet-enabled channel includes any of web pages, e-mail, and text messaging.

7. The method of claim 6, wherein said Internet-enabled channel is wireless.

8. The method of claim 1, further comprising providing an automatic sign-up page for advertisers and publishers, said automatic sign-up page including a central approval and denial capability.

9. The method of claim 1, further comprising allowing publishers to dynamically change ads on Internet sites.

10. The method of claim 9, wherein the change can be performed by specific rules, by random, by fractional representation, or by mathematical optimization.

11. The method of claim 3, further comprising:

collecting data; and

storing Internet user data in a database connected to said ad server.

12. The method of claim 11, wherein said data includes data related to said Internet user.

13. The method of claim 11, wherein said data includes data related to actions performed by said Internet user in relation to said ads.

14. The method of claim 13, wherein said actions include clicks, sales resulting from clicks, and inquiries resulting from clicks.

15. The method of claim 11, further comprising storing said data on a data server connected to said ad server.

16. The method of claim 1, wherein said ad server and said media server are provided at separate locations.

17. The method of claim 16, wherein said ad server and said media server are provided by separate entities.

18. A system for providing advertising to Internet-enabled channels, comprising:

an ad server connected to the Internet;

a media server connected to the Internet;

a database with advertiser data connected to said ad server;

a database with publisher data connected to said ad server;

a database with creative content for a plurality of Internet-enabled channels connected to said media server;

at least one user device to request publisher content;

wherein said content is sent from a server of said publisher to said user device, said content including code to request an ad be served;

said code including means to operate said user device to request an ad location from said ad server;

said ad server having software to supply an ad location to said user device;

said code further including means to operate said user device to request an ad from said media server; and

said media server having software to supply said ad for display on said user device.

19. The system of claim 18, wherein upon a user selection on said ad, having means for said code to operate said user device to request an advertiser URL from said ad server; and

said ad server provides an advertiser URL to said user device.

20. The system of claim 19, wherein said user device uses said advertiser URL to request an advertiser target page from an advertiser server on the Internet and said advertiser server delivers a target page for display on said user device.

21. The system of claim 18, wherein said user device includes any of personal computers, Internet devices, set-top boxes, PDAs, Internet-enabled phones, and ATM terminals.

22. The system of claim 18, wherein said creative includes any of GIF banners, animated GIF banners, JPEG banners, JavaScript, HTML, text, rich media, and streaming media.

23. The system of claim 18, wherein said Internet-enabled channel includes any of web pages, e-mail, and text messaging.

24. The system of claim 23, wherein said Internet-enabled channel is wireless.

25. The system of claim 18, further comprising providing an Internet page coded for an automatic sign-up for advertisers and publishers, said automatic sign-up page including a central approval and denial capability.

26. The system of claim 18, further comprising means for allowing publishers to dynamically change ads on Internet sites.

27. The system of claim 26, wherein the change can be performed by specific rules, by random, by fractional representation, or by mathematical optimization.

28. The system of claim 18, further comprising:

means for collecting data; and

a database with Internet user data connected to said ad server.

29. The system of claim 28, wherein said data includes data related to said Internet user.

30. The system of claim 28, wherein said data includes data related to actions performed by said Internet user in relation to said ads.

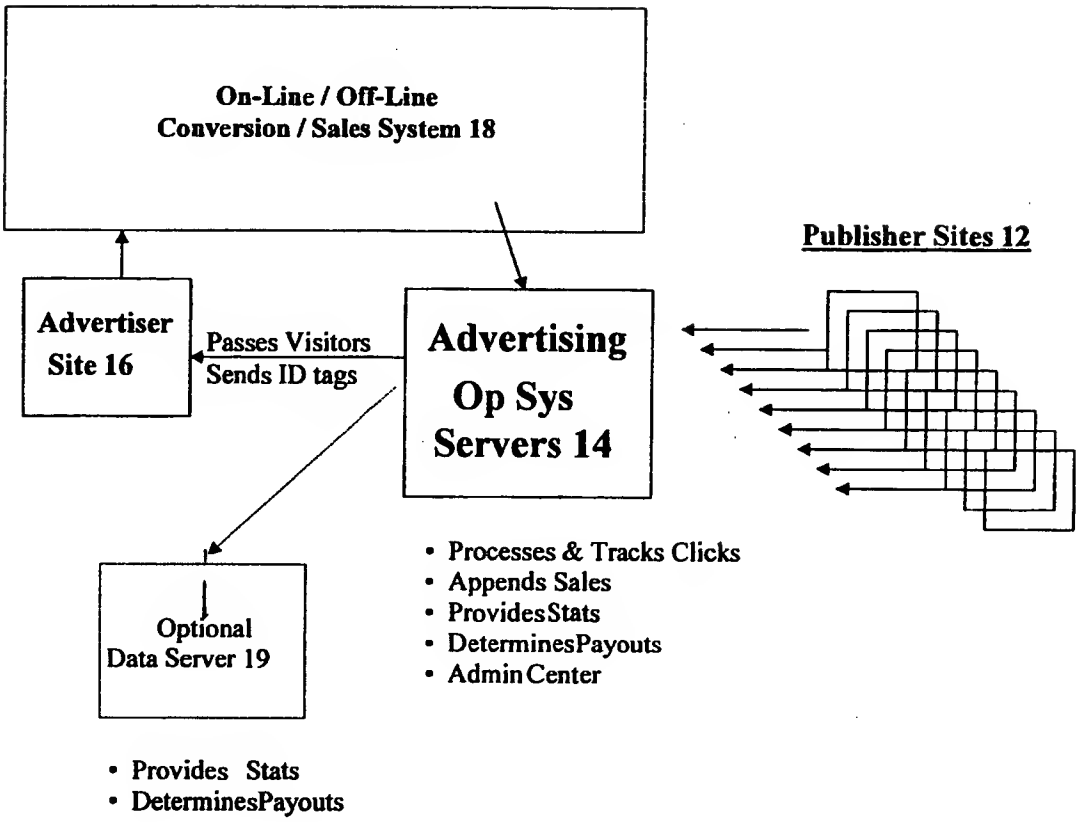
31. The system of claim 30, wherein said actions include clicks, sales resulting from clicks, and inquiries resulting from clicks.

32. The system of claim 28, further comprising a data server for storing said data connected to said ad server.

33. The system of claim 18, wherein said ad server and said media server are connected to the Internet at separate locations.

34. The system of claim 33, wherein said ad server and said media server are connected to the Internet by separate entities.

Figure 1A


On-Line / Off-Line
Conversion / Sales System 18
Publisher Sites 12
Advertiser
Site 16
Passes Visitors
Sends ID tags
Advertising
Op Sys
Servers 14
Optional
Data Server 19
• Processes & Tracks Clicks
• Appends Sales
• ProvidesStats
• DeterminesPayouts
• Admin Center
• Provides Stats
• DeterminesPayouts

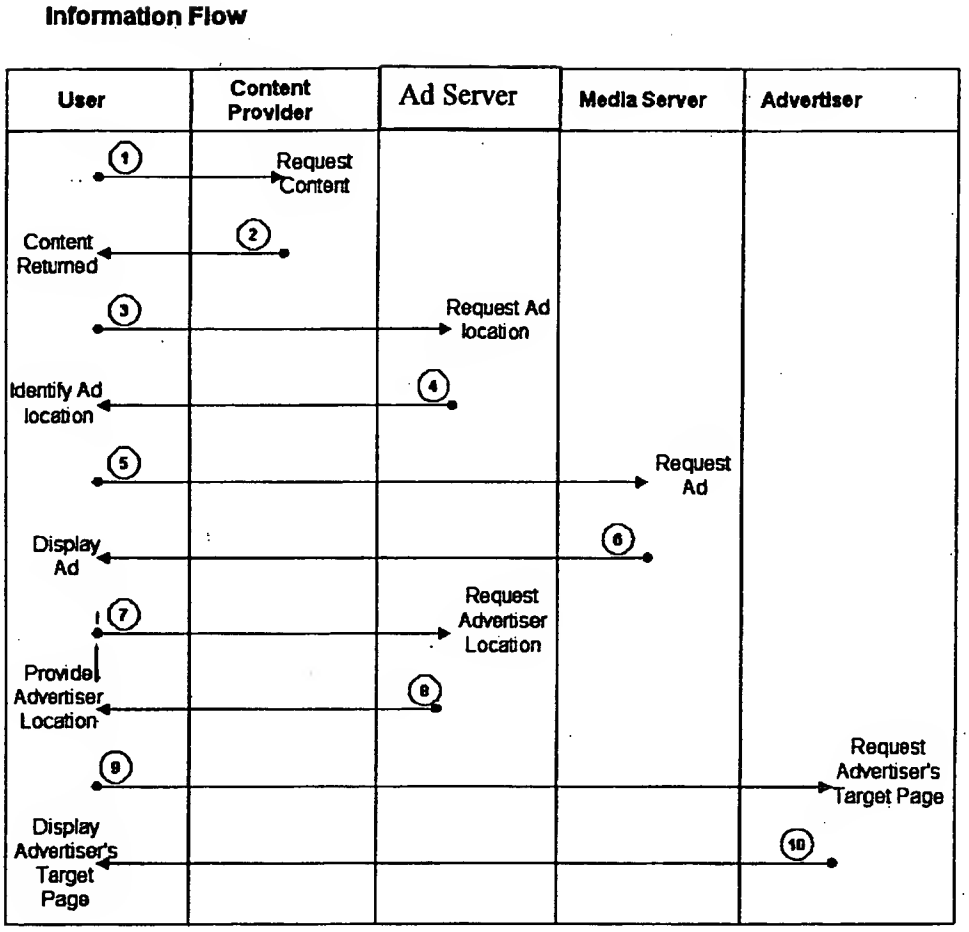

Information Flow
User
Content Provider
Ad Server
Media Server
Advertiser
1
Request Content
2
Content Returned
3
Request Ad location
4
Identify Ad location
5
Request Ad
6
Display Ad
7
Request Advertiser Location
8
Provide Advertiser Location
9
Request Advertiser's Target Page
10
Display Advertiser's Target Page

Figure 1B

Figure 2
Advertising Operating System

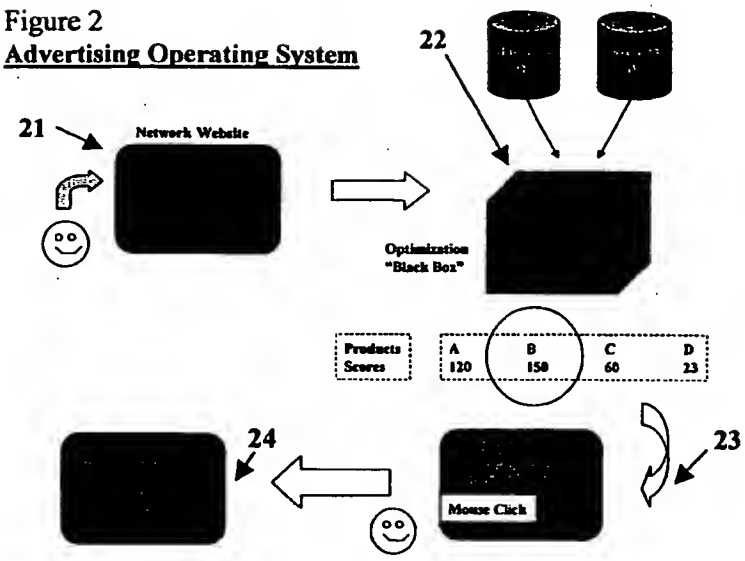


Figure 3

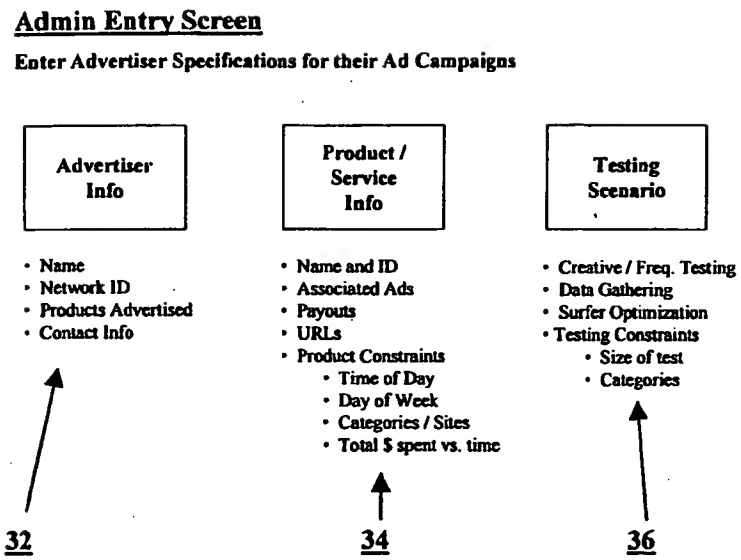

Admin Entry Screen
Enter Advertiser Specifications for their Ad Campaigns
Advertiser Info
Product / Service Info
Testing Scenario
• Name
• Network ID
• Products Advertised
• Contact Info
• Name and ID
• Associated Ads
• Payouts
• URLs
• Product Constraints
• Time of Day
• Day of Week
• Categories / Sites
• Total $ spent vs. time
• Creative / Freq. Testing
• Data Gathering
• Surfer Optimization
• Testing Constraints
• Size of test
• Categories
32
34
36

Figure 4

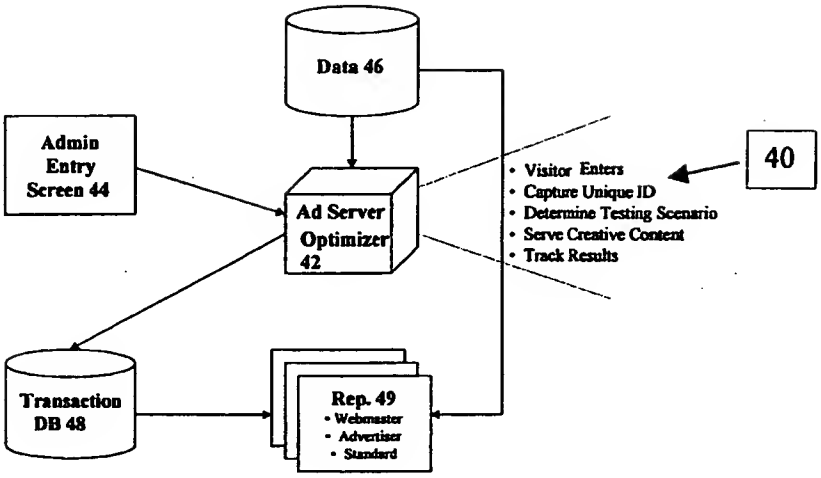

Data 46
Admin Entry Screen 44
Ad Server Optimizer 42
40
• Visitor Enters
• Capture Unique ID
• Determine Testing Scenario
• Serve Creative Content
• Track Results
Transaction DB 48
Rep. 49
• Webmaster
• Advertiser
• Standard

Figure 5A

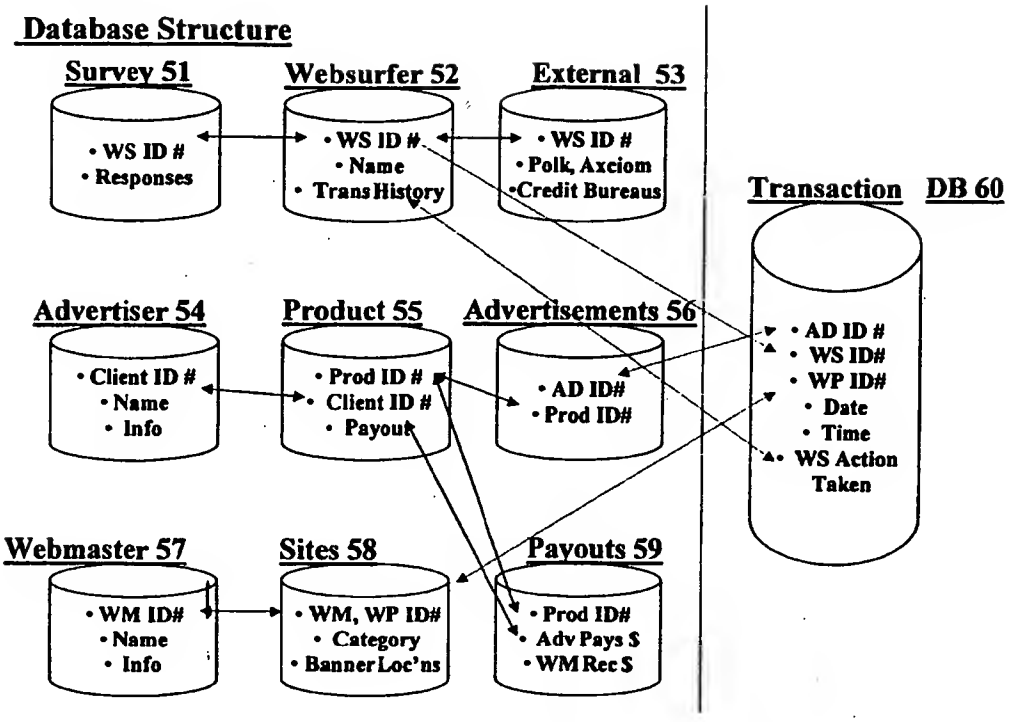

Database Structure
Survey 51
• WS ID #
• Responses
Websurfer 52
• WS ID #
• Name
• Trans History
External 53
• WS ID #
• Polk, Axciom
•Credit Bureaus
Transaction DB 60
• AD ID #
• WS ID#
• WP ID#
• Date
• Time
• WS Action Taken
Advertiser 54
• Client ID #
• Name
• Info
Product 55
• Prod ID #
• Client ID #
• Payout
Advertisements 56
• AD ID#
• Prod ID#
Webmaster 57
• WM ID#
• Name
• Info
Sites 58
• WM, WP ID#
• Category
• Banner Loc'ns
Payouts 59
• Prod ID#
• Adv Pays $
• WM Rec $

Figure 5B

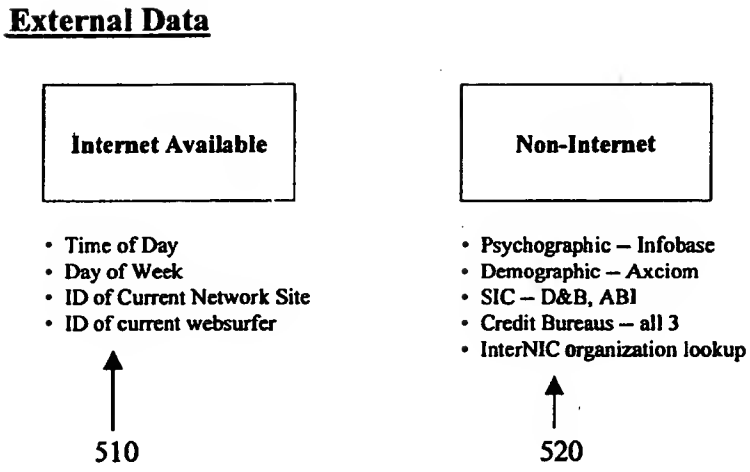


Figure 5C